METHOD FOR COMPUTING PARTIALLY COHERENT AERIAL IMAGERY

ABSTRACT

5   A method for simulating aerial images is provided where the integrand of a transmission cross-coefficient (TCC) integral is formed from defocused paraxial pupil transfer functions, and contour integration is performed over the boundary of the intersection of the offset pupil functions and the source function. Preferably, the paraxial pupil functions are approximated by a second order Taylor series expansion. The

10   integrand is preferably parameterized in terms of the angles subtending the arcs of the boundary of the integration region, and the integrand is further approximated by an expansion of analytically integrable terms having an error term that substantially monotically decreases as the number of expansion terms increases. Additional factors such as aberrations and amplitude variations can be included by using functions that are

15   simply multipied with the defocused paraxial pupil functions in the integrand. The integrands provide fast computations of TCC integrals that are accurate to within a desired tolerance.